

INPUT

MARKET FORECAST

U.S. Processing Services
Market

1994-1999

U.S. Market Analysis Program

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U.S. Processing Services Market

1994-1999

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Abstract

This INPUT report, *U.S. Processing Services Market, 1994-1999*, provides forecasts and analysis for the transaction processing, utility processing and "other" processing services submarkets. The five-year forecasts cover fifteen industry-specific and seven cross-industry markets. Leading vendors are identified and revenues indicated.

The report discusses areas of opportunity in the processing services market, together with the issues and trends presently influencing market growth. It also provides recommendations for vendors regarding strategies that recognize and take advantage of the key forces driving the market.

The report contains 40 pages and 17 exhibits.

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**U.S. Information Services Market
Analysis Program**

***U.S. Processing Services Market,
1994-1999***

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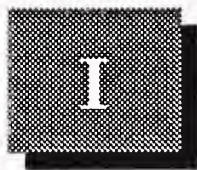
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Introduction

A

Purpose, Organization and Methodology

This section identifies the purpose and scope of this report, notes how the document is organized and explains INPUT's research methodology and the techniques used in the preparation of forecast data.

1. Purpose

The purpose of this forecast report is to identify key changes in the market for processing services and provide the 1994 INPUT forecast for this product/service market.

Product/Service Market Definition—The processing services product/service market, as defined by INPUT, is composed of three submarkets—transaction, utility and other processing services:

- *Transaction Processing*—With transaction processing, the client uses vendor-provided information systems—including hardware, software and/or data networks—at the vendor or customer site to process specific applications and update client databases. The application software is typically provided by the vendor.
- *Utility Processing*—For utility processing, the vendor provides basic software tools (language compilers, assemblers, DBMSs, graphics packages, mathematical models, scientific library routines, etc.) that enable clients to develop and/or operate their own programs or process data on the vendor's system.
- *Other Processing Services*—Here, the vendor provides a service—usually at the vendor site—such as scanning and other data entry services, laser printing, computer output microfilm (COM), CD preparation and other data output services, backup and disaster recovery.

Processing services vendors market transaction, utility and other processing services alone and in combinations. There are also vendors that only market selected functions, such as microfilm or disaster recovery services, or just one of the primary services such as transaction processing.

Most of the processing services product/service market is considered to be purchased by industry sectors—that is, it is industry-specific. The forecast for processing services expenditures within the 15 industry sectors plus expenditures for cross-industry sectors adds to the total forecast for the product/service market as a whole.

Processing services sold in conjunction with other services, such as network services, are included in the processing services sector.

2. Organization

In addition to this introductory chapter, the report contains analyses of the processing services market and competitive environment, as described below:

Chapter II, *Information Services Environment*—Discusses user needs influencing the use of processing services, relevant technologies and a variety of issues and trends driving or inhibiting the demand for processing services.

Chapter III, *Market Forecast*—Presents an analysis of the expenditures for processing services, by submarket, for the 15 vertical markets reviewed by INPUT.

Chapter IV, *Competitive Analysis*—Discusses key industry issues and considers the competitive positioning of major vendors. It also identifies significant vendors by size and application area.

Chapter V, *Conclusions and Recommendations*—Offers suggestions and recommendations for participants in the processing services market.

Appendix A, which contains the forecast database—presents a detailed forecast, by submarket, for the 15 vertical markets. A reconciliation to the previous forecast is also provided, together with a list of related reports of possible interest to the reader.

3. Methodology

Much of the data on which this report is based was gathered during 1994 as part of INPUT's ongoing market analysis program. Trends, market sizes and growth rates are based upon INPUT research and interviews with users of processing services and vendors of these services. INPUT

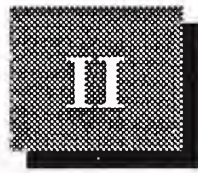
maintains ongoing relationships with, and a database of, all users and vendors interviewed. Interviewees for the research portion of this report were selected from this database of contacts.

INPUT Library—In addition, extensive use was made of INPUT's corporate library located in Mountain View, California. The resources in this library include on-line periodical databases, subscriptions to a broad range of computer and general business periodicals, continually updated files on more than 3,000 information services vendors, and the most up-to-date U.S. Department of Commerce publications on industry statistics.

Financial Data—It must be noted that vendors may be unwilling to provide detailed revenue information by product/service market or industry. Also, vendors often use different categories of industries and industry segments or view their services as falling into different product/service markets from those used by INPUT. Thus, INPUT must estimate revenues for these categories on a best-effort basis. For this reason, the product/service market and individual segment forecasts should be viewed as indicators of general patterns and trends rather than specific, detailed estimates for individual years.

Rounding—When displaying market forecast values in bar and column charts, INPUT rounds these amounts for ease of visual reference. Actual values are shown in Appendix A tables and may also be used in chapter text.

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Information Systems Environment

A Needs Influencing Use of Processing Services

When the mainframe was the primary computer platform for handling business applications, processing services rose to prominence. Many small and midsize companies did not have the capital to invest in mainframe systems nor the staffing to support them. Processing services allowed companies to automate business functions such as payroll and billing on a pay-as-you-go basis.

Information technology has changed considerably in the past few decades, with desktop systems becoming more powerful and less costly. Today, most companies (no matter what their size) have invested in some computer technology to support their business. In fact, the cost of hardware and software has reached a point where PCs are becoming a fixture in the average home along with the VCR and color TV. Vendors such as Compaq, which leads the home/consumer PC market in 1994, have made home computing and telecommuting more practical and affordable.

What have these changes done to the demand for processing services? As might be expected, the growth rate for many traditional services has leveled off as companies have brought applications in-house as it became more affordable to do so. However, the belt-tightening in American companies in recent years has led to efforts to reduce data processing costs. Many companies have decided to let information systems be handled by the "experts" who make it their business, while the companies focus all their internal efforts in their primary core business areas such as

banking or insurance. This has led to a counter trend of buying services rather than processing applications internally.

While growth may be leveling off in some areas, there are certain applications where needs are growing and use of a processing service vendor makes economic sense. Processing services will continue to offer advantages and economies of scale for certain types of applications. In addition, relatively new offerings in the processing services arena, such as disaster recovery services, are recording high rates of growth.

This chapter discusses the needs and technology affecting the market for processing services, along with related business issues and trends.

1. Applications Driving Demand

Demand for processing services will be driven by continued volumes in traditional applications and development of new applications to balance those that migrate in-house. The following are key applications uniquely suited for continued use of processing services.

a. Billing Applications

For those entities that generate large numbers of bills each month such as utilities, telecommunications and cable TV providers and retailers, processing services offer significant advantages. While billing is one of the most important functions in an organization, the applications supporting it do not fall into the mission-critical category. Due to the large volumes generated even by small companies, there are advantages to handing over the process to a third party that specializes in billing.

The telecommunications and cable TV industries, in particular, have needs that lend themselves to the use of processing services for billing. Telecommunications is an industry that has enjoyed healthy growth rates in recent years due to ongoing technological development. Since the divestiture of AT&T, there has been much jockeying for position between telephone companies and cable TV companies for the already lucrative market for new information/entertainment services for consumers. Today, it appears that both will have a role, with companies in one area acquiring or joining forces with those in the other to better position them to offer services, and establish themselves early on as technology and service leaders on the information superhighway.

Cable television technology is providing opportunities for new and different services. Pay-per-view options allow viewers to choose specific programs for which they are willing to pay extra fees. Interactive services offer opportunities to conduct transactions through cable television. This flexibility for the viewer translates into additional

complexities for the billing process. At the same time, the use of cellular phones is increasing and providers of such services are offering new options. Once again, the billing process needs to be sophisticated and flexible.

The cable television industry has historically been a heavy user of outside services. Many of the operators have been small businesses and have seen the economic advantages of using a service bureau. As their billing needs become more complex, these businesses are expected to increase their use of processing services in this area. The cellular industry also has taken advantage of the flexibility that outside services can provide. As this industry continues to grow, demand for billing services is expected to grow accordingly.

Utility and other retail billing continues to be an opportunity for processing services vendors. Given the complexities and time requirements of the billing process, the economies of scale associated with using an outside vendor are often more attractive than moving such an operation in-house.

b. POS Applications

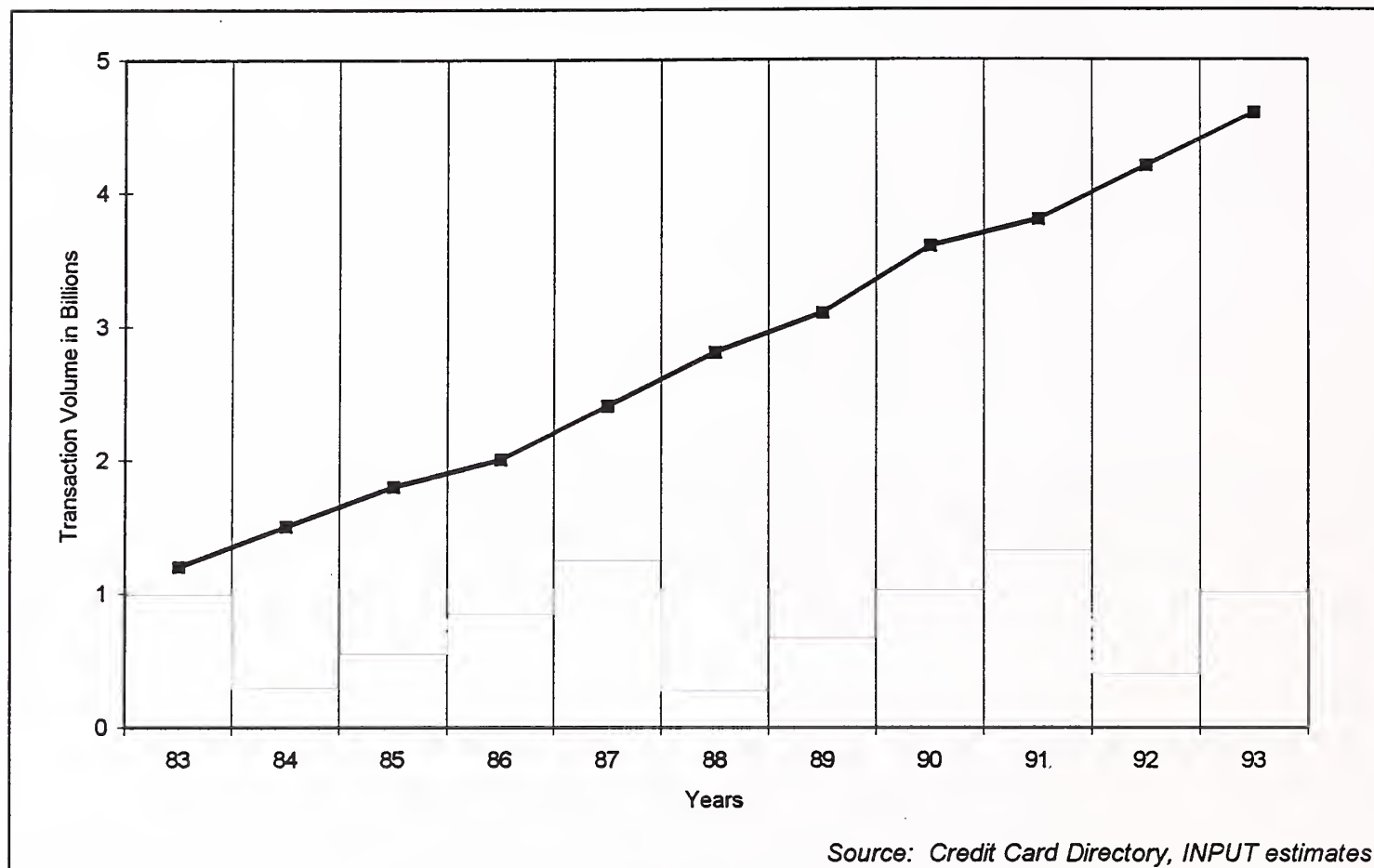
Anyone who has made recent a purchase at a grocery, discount, or department store has most likely seen firsthand the changes in technology used in these environments. Fewer imprints are made of credit cards, in favor of electronic "swipes" with near-instantaneous transaction approval. Debit card processing has sprouted up in more types of stores, allowing buyers to have funds taken from bank accounts directly without the need for writing a check. Processing of debit purchases occurs in a matter of seconds.

Check processing has also become more automated as electronic approval is available on a timely basis. In short, retailers are making it easier and faster to conduct electronic transactions. Consumers are reacting to this convenience with increased use of credit and debit cards in making purchases.

While growth in the number of credit cards continues to be modest, significant growth is being noted in the number of *transactions* handled by credit cards. As shown in Exhibit II-1, credit card usage increased by 10% in 1993 as compared with the previous year. Some card companies are using various incentives such as GM's rebate program and the offering of airline mileage rewards to encourage use. As transactions increase, revenue for processing services vendors increases accordingly.

EXHIBIT II-1

Industrywide Credit Transaction Volumes

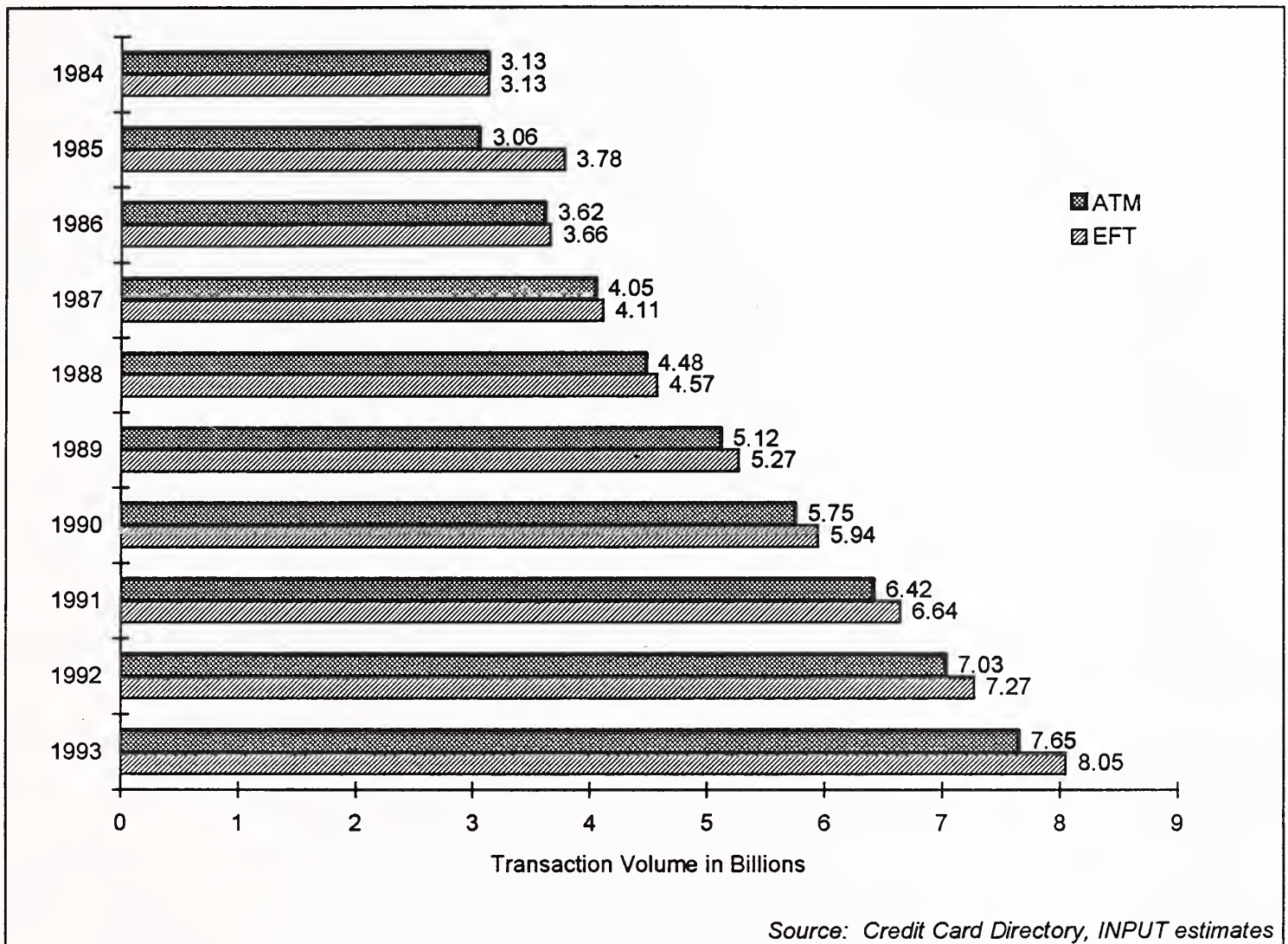


Large processing services vendors have business units focusing specifically on these applications. Their size and system sophistication offer advantages over other alternatives in handling these transactions. However, these vendors will need to continue to stay ahead of the game in the areas of technical advancement and reliability to ensure that large customers do not take on these requirements internally. For example, a consortium of banks in the Midwest is in the process of forming Electronic Payment Systems, which would be a processing service to handle transactions in member banks.

Debit transactions are becoming more commonplace as the number of places where purchases can be made with these cards increases. Grocery and discount stores, as well as many gas stations, offer customers the option of using their debit cards. As shown in Exhibit II-2, industrywide debit transactions grew from 14.3 billion in 1992 to 15.7 in 1993, an increase of 9.5%. Visa and MasterCard's nationwide networks, Interlink and Maestro, will support continued convenience, driving increased transaction volumes.

EXHIBIT II-2

Industrywide Debit Transaction Volumes

**c. Claims Processing**

While the specifics of the Clinton administration's health care reform are yet to be finalized, the trend toward electronic processing of insurance claims is expected to continue.

In 1992, the Health Care Financing Administration standardized the Medicare form for electronic submission. The department of Health and Human Services has proposed a U.S. health claims processing network to automate health and medical insurance claims processing. Estimates have been made of savings of more than \$20 billion annually by the year 2000.

In 1994, the battle over how, why and how much U.S. health care should be reformed continues to rage on Capitol Hill. For President Clinton and

his supporters, health care reform is embodied by a proposed national health card which every citizen will carry. Similar to the latest wave of driver's licenses in California and other states, the card will have a magnetic strip encoded with the bearer's medical history. If the Clinton plan is enacted, the sheer number of health cards issued will increase the technological needs of the health care industry, and will likely drive claims processing rates to astronomical levels.

As the handling of these claims becomes more automated, the effect on processing services can be significant. Transactions will be involved in processing such claims involving multiple entities from health care providers to insurers to government agencies.

d. New Applications

Perhaps most significant for processing services is the wealth of new applications being evaluated, piloted and discussed that have potential for using processing services.

For example, in the credit card arena, plans have been in the works to extend credit card privileges to establishments where card usage has not previously been possible. These include fast food restaurants, parking garages and taxicabs. In some cases, the development of cellular technology will make this possible.

Home banking and shopping, services that have been discussed and planned for years, are positioned to become more of a reality in the near future, due to a number of factors. The local telephone companies—which were prohibited for years from offering information-related services—have been given the go-ahead to expand into such areas. At the same time, cable television has the technology to offer such services and alliances. Mergers are being formed with telephone operations such as the recently announced Bell/Atlantic/TCI merger. Lastly, the penetration of the personal computer into the home sets the stage for such services and will generate transactions requiring processing services.

Expanded use of automatic teller machines (ATMs) represents another potential boost to transactions processing. As these devices become located in retail establishments and other convenient places for consumers, some plans call for the addition of such capabilities as selling tickets to sporting events and theaters as well as for airline travel.

e. Disaster Recovery

The greatest opportunity for growth is in the disaster recovery area. The past few years have seen more than their share of disasters. 1992 goes on the books as the worst year for catastrophic events, given the effects of

hurricanes Andrew and Iniki, the Los Angeles riots along with hailstorms, tornadoes and floods. The trend continued in 1993 with the flooding of the Mississippi River, the fires in Southern California, devastating storms on the East Coast and the World Trade Center bombing. By September, 1994 proved equally hazardous in the aftermath of the Northridge, California earthquake, a record cold wave in the mid-Atlantic states, ruined water mains in Atlanta and the USAir jet crash near Pittsburgh, Pennsylvania.

These events have increased awareness of the need for disaster recovery services, as many companies have learned firsthand the value of services, such as "hot sites", and the devastating effect when recovery services have not been planned. Yet at the same time, more than half the respondents in a recent industry survey report they are not using disaster planning. The move to distributed systems is affecting need even further, as many recovery systems have focused on the mainframe. Many recovery plans have not yet fully addressed the needs of PCs and LANs, even though much critical data resides on such devices, particularly in businesses where telecommuting is becoming popular and economically appealing. Given that disaster awareness is high, it is likely that more companies will be implementing plans, driving increased usage of disaster recovery services.

Interestingly enough, however, while the high-profile recent disasters have done much to increase awareness, the more likely risk a data center faces is something less dramatic. Some statistics show that only 20% of computer shutdowns are a result of large-scale disasters. More prevalent causes are the failure of hardware/software, network failure or employee sabotage.

f. Traditional Transaction Processing

Many traditional needs for transaction processing continue, although with more modest growth. For example, payroll processing is a major application for processing services. Layoffs and overall cutbacks affecting employment in general also affect the demand for payroll processing. However, this application will likely continue to be a major one for processing services vendors. Companies are focusing their internal information systems efforts on mission-critical applications that drive the business. Payroll, while a necessary business application that needs to continue to run smoothly and meet requirements, is less focused on the business itself. Therefore, companies will continue to use outside services for payroll, as long as it is cost effective, and focus internal efforts in other areas.

B

Technology

Technological developments are a primary force behind the need, or lack thereof, for processing services. The capabilities of PCs and desktop workstations, along with the trend toward distributed processing, have taken a bite out of one of the key reasons for using processing services—cost. Computer technology today is becoming increasingly more affordable, leading some to question the need for some uses of processing services. Yet, on the other hand, it is this same technology development that is resulting in demand for other processing services such as disaster recovery.

Specific technologies that are affecting the processing services market include the following:

Powerful desktop systems—These systems make technology more affordable and available. Users see advantages in having more control over applications. Therefore this technology has resulted in in-house management of systems that previously used a third party.

Trend toward distributed processing—In the past, data and key applications resided on a mainframe, and the main issue was whether the companies contracted with an outside vendor for the use of its mainframe or acquired one on their own, hoping this investment would meet their needs in the years to come. Today, systems are much more complex. More companies are moving toward client/server technology and distributed processing, where data and applications reside in various locations throughout the organization. In the transaction processing arena, this trend allows users to make use of smaller, less costly systems for some applications. In the disaster recovery area, the same trend creates increased complexity as companies strive to have adequate recovery plans in place. Distributed processing and client/server architectures make the disaster recovery vendor's job more complex, but it also offers more opportunities to provide additional services.

Mobile Data Center—One way that disaster recovery vendors are dealing with supporting distributed systems is through use of mobile data centers. These transportable centers can support most functions for such groups and be quickly moved to a work group site that has suffered a system loss.

Cellular Technology—In the credit card processing area, cellular technology is allowing transactions to be made from locations that previously went unserved, including fast food restaurants and taxicabs.

The expansion of the cellular phone business, especially with new digital capabilities, affects processing services in the demand for billing services.

ATM Machines—The convenience of ATM machines has led to ongoing increased demand and usage. National networks allow cardholders to conduct transactions while traveling. As banks and retailers offer additional services through the ATM in the future, opportunities for increased transactions for processing services vendors will open up.

Smart cards—While still comparatively in its infancy, much attention is being focused today on the capabilities of smart cards. These devices allow transactions to be conducted through use of a credit-card-sized device that stores updatable electronic data on an embedded computer chip. Transportation authorities in New York City are looking at using this technology for collecting tolls. As noted earlier, smart cards are a key component of the president's health care reform initiative.

EDI—EDI has proved to be a cost-effective alternative to paper transactions. As standards for this technology are finalized, its usage is expected to continue to rise. Companies are finding it is less costly and more timely to conduct business electronically than with paper-based systems. The growth in EDI for purchasing, claims processing and various other applications will increase the number of transactions conducted which were previously handled manually.

C

Key Issues and Trends

There are a number of general business or technological issues and trends occurring in the U.S. today that are affecting the need for processing services. These factors are likely to affect demand positively in some ways and negatively in other ways. These include:

Economy—Clearly the state of the economy affects the demand for any kind of product and service. Yet processing services, being usage-based by nature, are particularly vulnerable. Such revenues are based on day-to-day usage, and as use goes down due to economic factors, revenue follows. For example, unemployment has a direct effect on volume for payroll services, as fees are typically on a "per employee" basis. Credit/debit card processing is based on purchasing volumes. As buyers tighten their belts and buy less, the volume of transactions goes down. On the other hand, use of credit can also go up as buyers defer payment to a later time.

The economy has led many companies to rethink their strategies and reorganize and streamline their businesses. This has led to cutbacks across the board—particularly in the information systems area. Such

reasoning has made it less feasible for companies to consider moving applications in-house and, in fact, has led some companies to move in-house systems to a third-party provider. Disaster recovery vendors in particular have benefited from this as their function tends to be a fixed, constant portion of user budgets which cannot realistically be reduced or eliminated.

In the state and local government sector, reduction in federal funds have forced users to look to the outside for help. State and local government allocations for IS funding are frequently affected by legislative decisions to deliver new or different services; to raise or lower taxes on sales, incomes, or property; or otherwise change the way business is conducted. These all impact the development and operation of information systems.

Health Care Reform—The way health care is provided in this country is about to undergo dramatic changes. It is expected that the managed care approach will prevail, with strong emphasis on containing or reducing costs. While more people will be covered, there may be services that are typically available with most health care plans today that will be not be covered in the future. Processing services to the health care and insurance industries will be affected by all these changes. More information will need to be tracked and reported. Analysis will be required to control costs and claims processing will become more complex.

These changes all provide opportunities to the processing services vendor. As health care providers and insurers struggle to contain costs, investment in additional systems to support processes that have become more complex may be difficult. The availability of services through a third party that understands those needs and can address them cost effectively could be attractive to these businesses.

Specialized needs—The proliferation of PCs and LANs in businesses has led to the automation of an increasing number of functions. Many of these are unique to the industries involved. For example, in the health care industry, patient records are now being computerized and integrated with administrative and financial systems. With the budget cutbacks that many companies are experiencing and the lack of skilled personnel to support new systems development, the availability of third-party solutions presents an attractive option.

Outsourcing Trend—There is a definite trend toward outsourcing some or all of information processing in many industries today. This trend is changing the mindset of buyers. As they see their budgets shrink and other companies move to outsourcing, the desire to maintain complete in-house control over systems has lessened. While outsourcing involves a different type of contractual arrangement than use of processing services, the increased reliance on third parties is a positive trend. Many of the

traditional transaction processing companies are growing their businesses through the availability of outsourcing.

1. Driving Forces

As summarized in Exhibit II-3, the following are the forces driving the use of processing services:

EXHIBIT II-3

Processing Services Driving Forces

- Health insurance reform
- Disaster recovery service needs
- Credit/debit card usage
- Emphasis on cost reduction
- Networking requirements
- Economies of scale

Health Insurance Reform—The anticipated changes in the U.S. health care system lend themselves to increased automation. There will be more people served with closer tracking of costs and analysis of services and the appropriateness of them. The approval and claims process will become more complex. On-line claims processing will be a significant part of this trend. Overall transactions between various parties will increase, providing opportunities for transaction processing providers.

Need for Disaster Recovery Services—The number of high-profile disasters in recent years is increasing awareness of the need for disaster recovery plans and services. Yet various studies have shown that the use of these systems has not yet caught up with the obvious need for them. The result is that there are many companies that do not yet use these services, even though they are becoming increasingly aware of their importance. The trend toward the use of client/server technology creates an additional demand as companies implement critical functions under this architecture and require disaster recovery plans for this technology and the mainframe. These forces translate into opportunities for increased business for disaster recovery vendors.

Credit/Debit Card Usage—As credit/debit card providers offer incentives for increased use and include new services, usage of these cards is expected to drive increased demand for transaction processing services.

Cost Reduction—Companies are looking for ways to reduce costs, in general, and for information systems, in particular. Many companies are no longer interested in handling their own applications as they see costs increase and availability of staff decrease. If use of a third party is cost-effective, demand is likely to increase for such services.

Networking Among Parties—In looking at the applications where growth is expected, networking among applications users is common. For example, credit and debit transactions involve communication among various retailers, banks and credit card bureaus. Claims processing involves linkages between a variety of health care providers (hospitals, physicians, labs) and public and private insurers. In these scenarios, the networking capabilities of processing services vendors offer significant advantages over internally developed solutions.

Economies of Scale—Because processing services vendors handle many transactions for many customers, they are able to invest in sophisticated hardware, software and networking to support these needs. While computer hardware has certainly come down in price, the networking and software required to support minimal transaction time may be less affordable to individual clients. Processing services vendors can offer a significant advantage if they provide such sophisticated capability at competitive pricing. For example, third-party billing and payroll processing companies are able to invest in hardware and software that would be less affordable to small, individual companies.

2. Inhibiting Forces

As summarized in Exhibit II-4, the following are the forces inhibiting the growth of processing services:

EXHIBIT II-4

Processing Services Inhibiting Forces

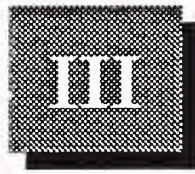
- Lower cost in-house solutions
- Market maturity

Reduced Costs of In-House Solutions—Small to midsized companies that previously relied on processing services as their only option (due to the high cost of mainframes), now have more alternatives available to them. Costs have continually come down for PC-based systems while the power of these systems has increased. Off-the-shelf software has been developed for many new or existing applications, making it cost-effective

(in many cases) to handle such applications internally. Vendors need to emphasize the economies of scale associated with continued use of processing services and remain cost-competitive with in-house alternatives.

Mature market—In general, the market for processing services is a mature one, particularly in the transaction and utility processing segments. Many of the applications best suited to these services have been implemented and users have been making use of them for some time. For example, for payroll services the market is somewhat saturated, with limited opportunity for significant growth—a growth not likely to occur while unemployment remains at record levels. New growth opportunities exist primarily in the disaster recovery segment, with some opportunity for increased usage in specific segments such as debit card and claims processing.

Blank



Market Forecast

A

Market Overview and Structure

Despite the maturity of the processing services market and the decreased cost of in-house solutions, the processing services product/service market as a whole is holding its own in the marketplace, with an 9% CAGR projected for the period 1994-1999. In fact, in comparison with projections in last year's report, processing services is doing better than expected. As indicated in Exhibit III-1, actual expenditures in 1993 for processing services were \$21.6 billion as compared with the anticipated \$19.4 billion. INPUT has projected expenditures in 1994 at \$23.4 billion, as compared with the \$20.9 billion projected last year. These improvements were driven primarily by higher than anticipated expenditures in the banking/finance and state and local government segments.

EXHIBIT III-1

Processing Services Market Overview (\$ Billions)

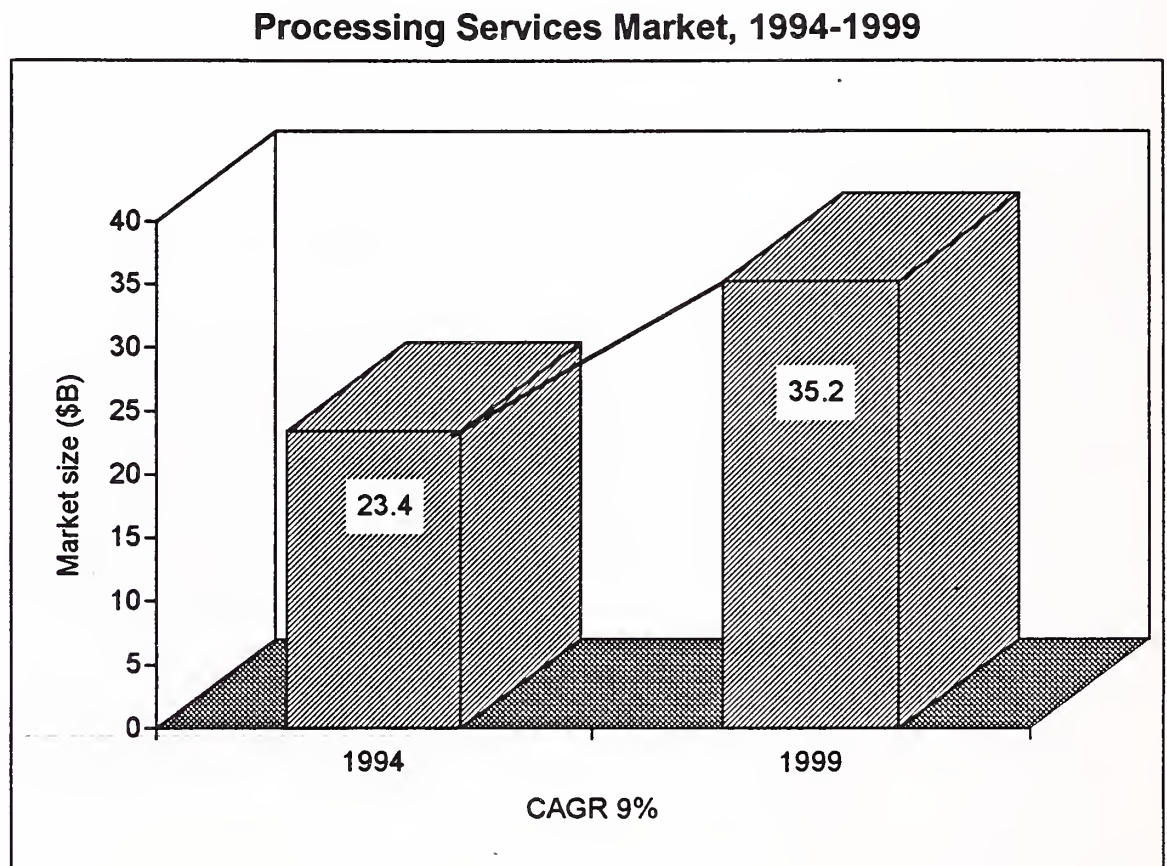
1993 Report		1994 Report	
1993 Forecast - \$19.4	versus	1993 Actual - \$21.6	
1994 Forecast - \$20.9	versus	1994 Forecast - \$23.4	
1993 - 1994 Forecast Growth Rate 8% CAGR	versus	1994 - 1998 Forecast Growth Rate 9% CAGR	

As noted earlier, financial projections in this report address transaction, utility and "other" processing services expenditures. Outsourcing expenditures are provided in a separate report, *Information Systems Outsourcing Market Opportunities, 1994-1999*.

B**Forecast by Submarket**

INPUT estimates that the processing services market will grow from a 1993 level of \$21.6 billion in expenditures, at an 8% growth rate, to \$23.4 billion in 1994 and projects that it will grow at a CAGR of 9% to \$35.2 billion in 1999, as shown in Exhibit III-2.

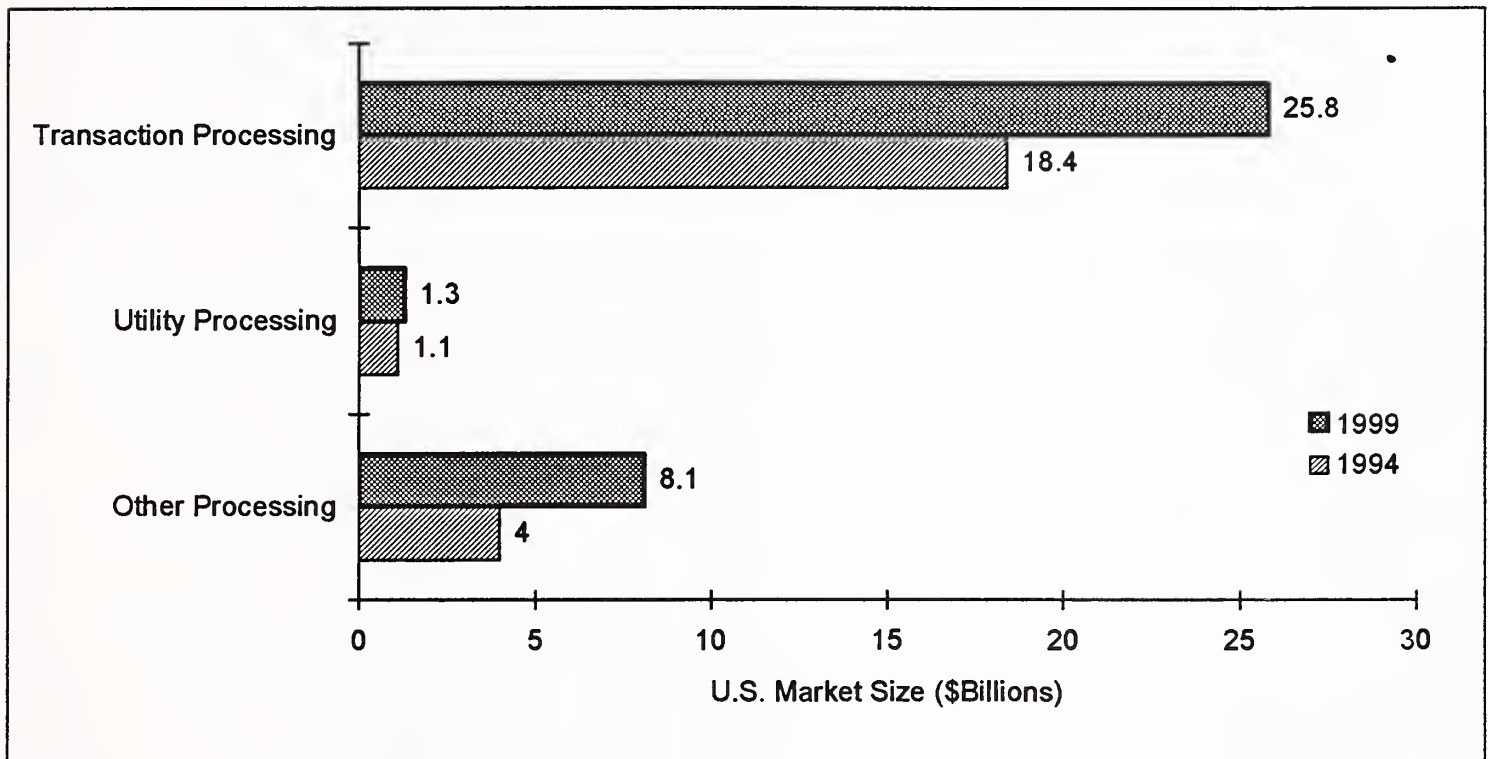
EXHIBIT III-2



All processing services submarkets will experience market growth during the forecast period, as shown in Exhibit III-3. "Other" processing services, driven by consistent needs for disaster recovery services, will grow at the highest rate, with a CAGR of 16%—more than doubling expenditures for this submarket from \$4.0 billion in 1994 to \$8.1 billion in 1999.

EXHIBIT III-3

Processing Services Market by Submode 1994-1999

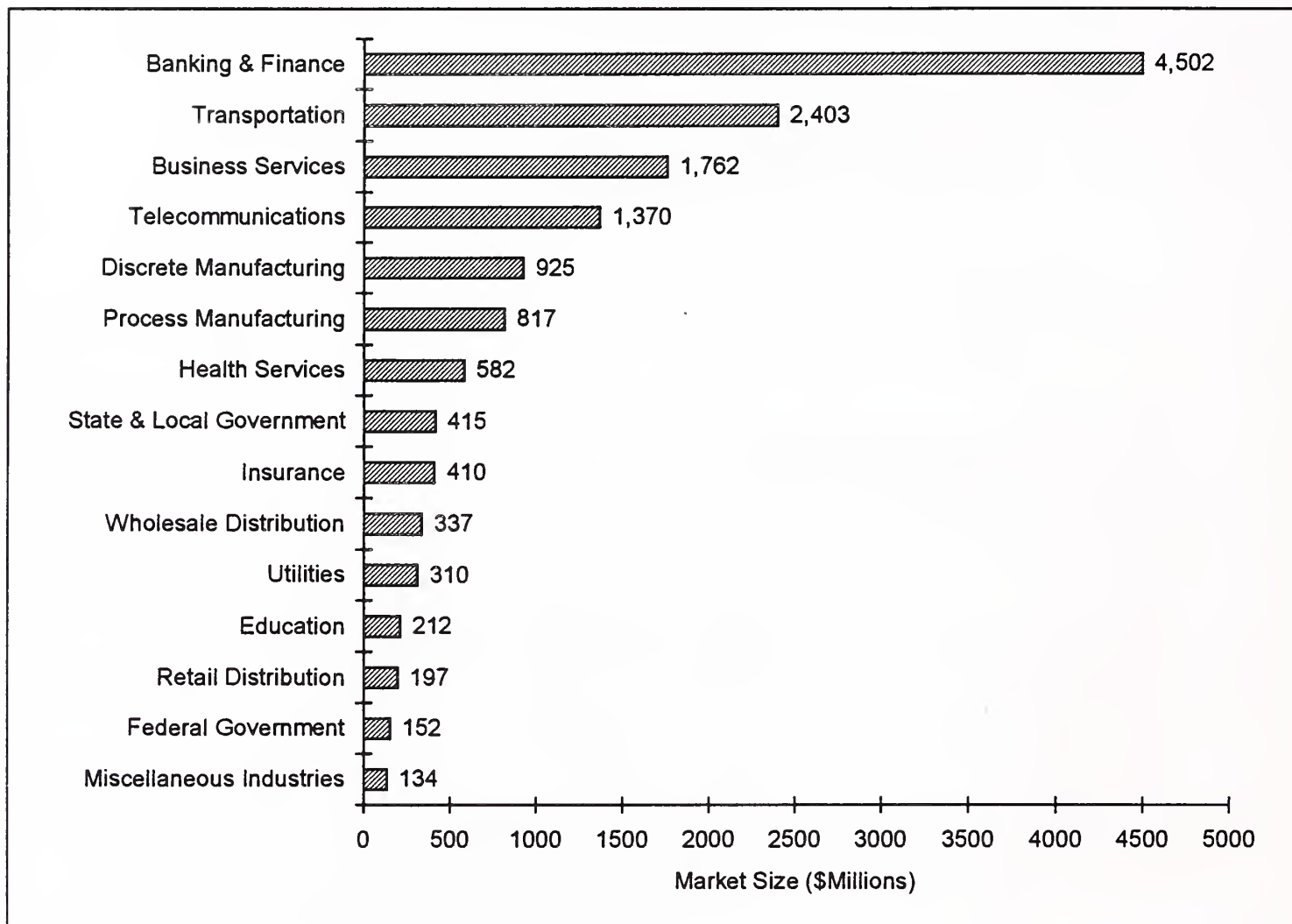


Utility processing is expected to have a modest rate of growth, due to the negative effects of the greater availability of in-house systems. It will grow at a CAGR of 4%, or one quarter the rate of growth for “other” processing services. Expenditures in this category will increase from \$1.1 billion in 1994 to more than \$1.3 billion in 1999.

1. Transaction Processing Services Market

The transaction processing market is divided into industry-specific and cross-industry sectors. The distribution of the \$14.5 billion in user expenditures forecast for industry-specific transaction processing in 1994 is shown in Exhibit III-4. Expenditures are spread across 15 industry sectors and are greatest in the banking and finance (\$4.4 billion) and transportation (\$2.4 billion) sectors.

EXHIBIT III-4

1994 Transaction Processing Expenditures by Industry Sector

Banking and finance will continue to be the largest industry sector through 1999, increasing from 24% of all transaction processing expenditures in 1994 to 28% of expenditures in 1999. Its rate of growth is steady but moderate at 10%.

Transportation, while continuing to represent the second largest industry sector in terms of expenditures through 1999, is expected to increase spending at a CAGR of 6% through 1999. Expenditures in this industry are dominated by the large computer reservation systems such as SABRE and Apollo. The continuing financial problems of the airline industry are tempering growth in this market. In early September, for example, commercial carrier USAir saw its stock value plunge in the days following a jet crash near Pittsburgh, Pennsylvania in which 131 company employees and passengers perished.

As noted in Exhibit III-5, during the period from 1994 to 1999 expenditures for the telecommunications market will grow more rapidly than in the rest of the vertical industry markets. With a CAGR of 16%, telecommunications will move into third place behind transportation and banking and finance in user expenditures by 1999. This increase is attributed to the growth of the industry itself as well as to increased demand for services such as billing.

EXHIBIT III-5

Transaction Processing Industry Sector Growth Rates, 1994-1999

Industry Sector	Revenues (\$M)		CAGR (Percent)
	1994	1999	
Telecommunications	1,370	2,819	16
State & Local Gov't	415	751	13
Utilities	310	525	11
Banking & Finance	4,502	7,210	10
Transportation	2,403	3,145	6
Insurance	410	538	6
Retail Trade	197	264	6
Health Services	582	706	4
Discrete Manufacturing	925	1,069	3
Process Manufacturing	817	960	3
Wholesale Trade	337	382	3
Business Services	1,762	1,915	2
Education	212	233	2
Federal Gov't	152	146	-1
Misc. Industries	134	122	-2

State and local government, while representing a comparatively small portion of today's expenditures, are expected to increase processing services spending at a healthy 13% CAGR, due to ongoing budget constraints limiting systems acquisition and support.

Expenditures by the utilities segment is also forecast at a healthy 11%. Small utilities frequently use processing services for day-to-day transaction processing. An important opportunity for vendors is the conversion of facilities records to computer form. Automated conversion tools are becoming more economical, helping to justify this move. The complexity of "nuclear codes" and the high-performance resources needed

to run these massive “number crunchers” have led to a significant on-line, frequently interactive, market in the niche of electric utilities with nuclear power plants.

Given the uncertainty of the future of health care coverage at this time, INPUT continues to project relatively modest rates of growth in health care and insurance. As electronic claims processing becomes more of a reality, projections may be modified in the future to reflect any positive impact of Clinton’s health care reform initiative. How much revenue from this process will be attributed to processing services, as compared to EDI, is unknown at this time.

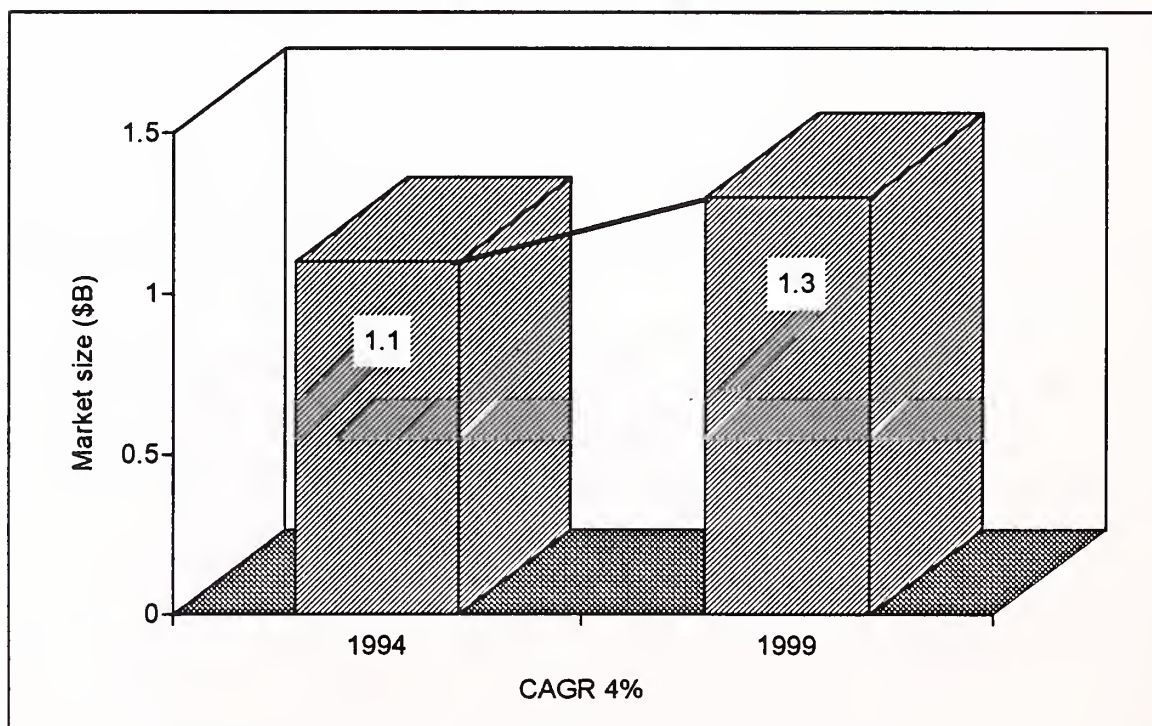
2. Utility Processing Services Market

Utility processing—neither industry nor cross-industry-oriented—is still being used by large businesses and the government when certain unique resources are required to run or test applications, or when it is more desirable or economically feasible to use resources from a vendor rather than provide them internally.

In 1993, expenditures for utility processing services were more than \$1 billion. Expenditures in 1994 are expected to grow 4%, to more than \$1.1 billion, and INPUT forecasts a CAGR of 4% to \$1.3 billion in 1999, as shown in Exhibit III-6.

EXHIBIT III-6

Utility Processing Services Market, 1994-1999

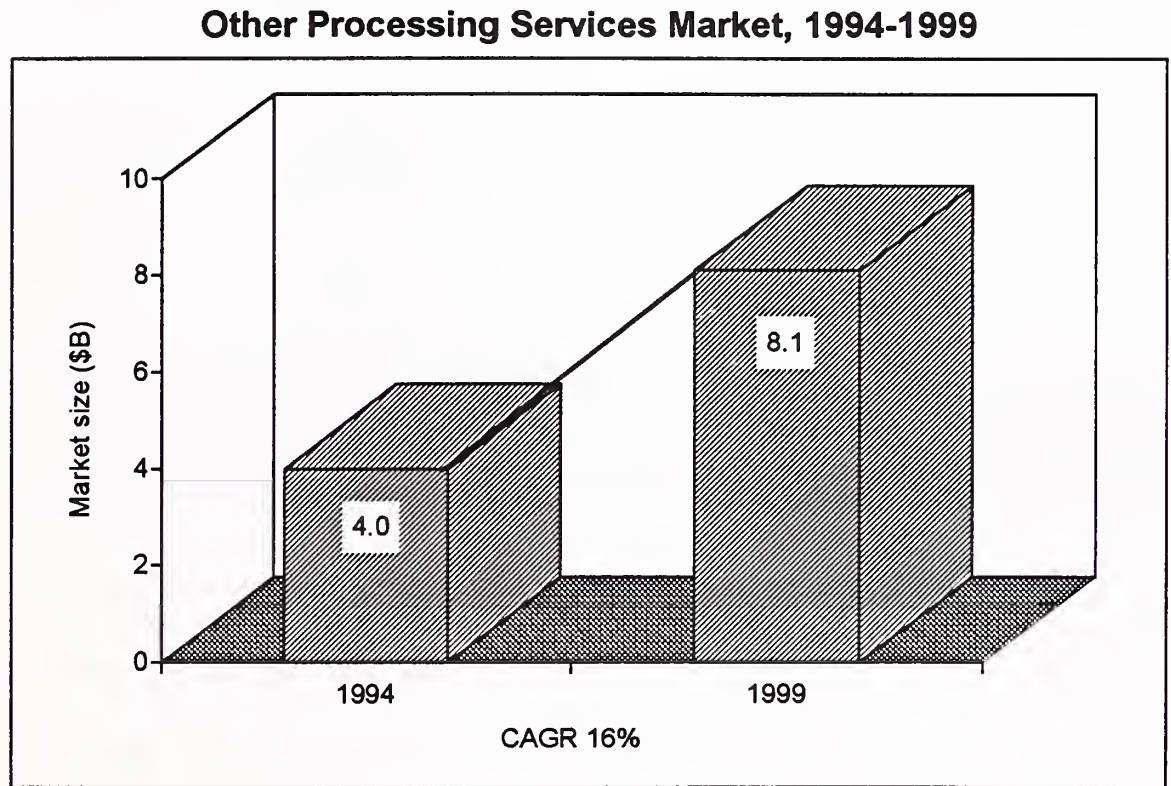


The growth rate for utility processing has been declining over time, and any investment in resources will be most feasible where such a service is a supplementary capability for a vendor offering transaction or other processing services.

3. Other Processing Services Market

By far the highest growth rate is for other processing services, a growth which is driven by the burgeoning demand for disaster recovery services. The market for these services is expected to grow at a CAGR of 16%—from \$4 billion in 1994 to \$8.1 billion in 1999, as shown in Exhibit III-7.

EXHIBIT III-7



Given the increasing reliance of American businesses on information systems and the increased awareness of the vulnerability of these systems in the light of recent, highly publicized disasters, disaster recovery vendors now have, and will continue to have, substantial opportunities to expand their business. While it is expected that in 1994 other processing services will represent 16.8% of overall processing services expenditures, by 1999 this percentage will increase to 23%.

The other processing services market also includes operational services such as pickup and delivery of work, remote data entry and special output services. These resources also have provided opportunities for processing vendors to obtain additional revenue.

Some of the other services—computer output on microfilm (COM), laser printing and remote data entry—have been sold separately as well as with transaction processing services.

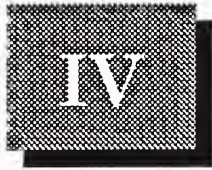
C

Analysis

While there continues to be a sizable market for traditional transaction processing services such as payroll, processing services as a whole is a mature market that came of age in a time when technology was not as affordable to small business as it is today. To fill the gap left by applications migrating to in-house systems, processing services vendors will realize growth from new services and from the increasing transaction volumes of existing services.

Vendors of disaster recovery services are well positioned for growth in the next five years, as demand for such services will dramatically increase. Company executives have noted in the papers and trade publications the devastating effects on computer operations of the many catastrophic events that have occurred in recent years. Many companies in the process of implementing client/server solutions have not yet resolved their disaster recovery solutions. In the aftermath of the Northridge earthquake, organizations of all sizes are becoming more aware of the need for such solutions and are expected to obtain disaster recovery services in increasing numbers over the next five years.

Vendors focused on the banking and finance sectors will continue to see revenues increase at the same rate of growth as that of processing services overall. This industry has traditionally made heavy use of processing services and, while some applications may have moved in-house, many companies have cut back (and in some cases eliminated) in-house operations in favor of third-party management. Credit/debit card and check processing requirements represent the most significant opportunities for increasing transaction volumes in this sector. Vendors addressing the specific needs of key industries have the opportunity for growth as such needs develop—particularly in the banking/finance, telecommunications and health services sectors.



Competitive Analysis

A

Major Players

The leading vendors, along with their estimated processing services revenues, are listed in Exhibit IV-1.

EXHIBIT IV-1

Leading Processing Services Vendors U.S. Revenue, 1993

Rank	Vendor	Estimated Processing Services Revenue Shared (\$ Millions)	Growth 92-93 (Percent)
1	ADP	1,645	18
2	FFMC	1,585	17
3	First Data	500	-40
4	GTech	301	43
5	DST Systems	265	9
6	Ceridian	230	10
7	SunGard	230	16
8	Equifax	210	10
9	IBM ISSC	200	15
10	Paychex	200	18
11	Shared Medical	175	7
12	Total Systems Services	152	15

Source: INPUT, Vendor Annual Reports

It is interesting to note that despite the maturity of the transaction processing segment—the largest portion of processing services expenditures—most of the leading vendors experienced revenue increases

in 1993 with many realizing double-digit growth. This can be attributed to a number of factors. Some vendors have grown as a result of aggressive acquisition strategies. For example, in 1993, FIserv acquired the bank data processing operations of one of its largest competitors, First Financial Management Corporation (FFMC). Since its inception in 1984, FIserv has made 40 strategic acquisitions.

In early 1994, FFMC signed an agreement for its subsidiary First Image Management Company to purchase the assets of AT&T Global Information Solutions' Information Imaging Systems division (AT&T IIS). The AT&T company operates 13 data centers nationwide to provide computer output microfilm, micropublishing, computer processing and related image and print processing services. FFMC's strategic focus in the deal is to branch out into new and important processing services markets. Yet existing markets still afford great opportunities. IBM, for example, opened a second national disaster recovery center in March, 1994 to address the continued need for recovery services among its current and new customers. Located in New York state, the Sterling Business Recovery Services Center can recover business systems based on PC-LANs, midrange systems and IBM-based enterprise systems.

In addition to the large corporations discussed above, there are many transaction processing vendors with significantly lower processing services revenues that have a very specialized focus in a particular industry or application. These include companies such as Shared Medical, which serves only the health care industry, CableData, which has developed services for the cable television industry, and Anacomp, which is specialized in the micrographics area. Exhibit IV-2 shows the major markets for some of the leading vendors.

EXHIBIT IV-2

Major Markets of Selected Leading Processing Services Vendors

Vendor	Major Markets
ADP	Cross-industry human resources, banking and finance, insurance
First Data	Banking and finance, health, cable
Anacomp	Computer output microfilm
CCH Computax	Cross-industry tax accounting
Comdata	Transportation leisure, gaming, retail
Ceridian	Various markets, including banking and finance and cross-industry human resources
Covia	Transportation
FFMC	Banking and finance, health
Fiserv	Banking and finance
Gtech	State and local government
NDC	Banking and finance, retail, health, government, cross-industry
Shared Medical	Health care services
SunGard	Disaster recovery services
EDS	Banking and finance, communications, energy, government, health care

Another tier of vendors providing processing services specializes in one of the key growth areas, disaster recovery services. This segment is dominated by Comdisco, SunGard Recovery Services, and IBM's ISSC; however, others have entered the field in the past few years, as shown in Exhibit IV-3.

EXHIBIT IV-3

Selected Disaster Recovery Vendors

- Comdisco
- SunGard
- CSC Compusource
- Digital
- HP
- IBM-ISSC
- National Data Guard Technology
- NCR Recovery Business Services
- Weyerhaeuser Recover Services

While disaster recovery vendors derive the great majority (if not all) of their revenue from these services, transaction processing vendors tend to have their hand in a number of areas, as noted in Exhibit IV-4.

EXHIBIT IV-4

Other IS Services Offered by Selected Processing Services Vendors

	Turnkey Systems	Network/EID	Systems Ops.	SI	Prof. Services	Appl. Software
ADP	X	X				
EDS	X		X	X	X	
First Data	X	X	X	X	X	X
CCH Computax						X
Equifax		X				X
Fiserv		X	X			X
NDC	X		X			X
Shared Medical Systems	X	X	X		X	X
SunGard	X					X
IBM ISSC		X	X	X	X	X

Today's buyer wants to have a number of service options while minimizing the number of vendors needed to meet related needs. Therefore, a medical vendor of processing services will also offer software or turnkey systems. Providers of transaction processing systems have the

expertise to move into the growing systems operations market—a market that offers substantially greater opportunities for increased revenue than does processing services. Offering professional and systems integration services positions a vendor to understand the needs of a customer's (or prospect's) business and to be able to meet those needs in a variety of ways. As the growth of the processing services segments of the product/service market levels off, the importance of offering this variety of services will become more critical to survival.

B

Competitive Positioning

Payroll—ADP and Ceridian Employer Services dominate the market for this service, with other, smaller players such as Paychex also having strong positions in a particular niche. Payroll processing is a mature market segment with the leaders holding a strong foothold. ADP alone processes paychecks for 16 million Americans. Unless a vendor were to develop a solution to a very specialized payroll processing need, it is unlikely that the market leaders will change in the next five years.

Banking and Finance—While there are clear market leaders in this industry sector—e.g., First Data, First Financial Management Corporation—the banking and finance sector is enormous, with new service needs occurring on a regular basis. Technology has allowed companies in this sector to alter the way they do business. ATMs and credit and debit card usage are constantly changing. This creates demand for more services, many of which can be addressed through transaction processing. Changing needs and the sheer size of the market also create opportunities for smaller, specialized processing service vendors to come in and fill a specific niche. While the market leaders will continue to dominate, there are opportunities for others to satisfy some of the many needs of this industry.

Telecommunications—This is a growth industry with changing needs. While some industries have a history of wanting to control all applications in-house, this industry has traditionally been open to the use of processing services vendors who can address solutions to their business needs in a cost-effective manner. The market for some of these services is just beginning to open and there are no clear market leaders. This industry is so technically complex that vendors who know the industry have a clear advantage. Many RBOCs are using expertise developed to address their own needs to provide services to others. For example, Bell South and Cincinnati Bell Information Systems have subsidiaries that focus on the cable billing market.

Medical—A number of relatively small companies that believe they understand medical applications have appeared in recent years to develop software and processing services within the medical community. Certain functions within health care have been slow to automate and are only now making use of computer technology. First Financial Management Corporation and First Data Corporation are looking to the health care industry as an opportunity to expand their businesses. While large vendors with extensive networks such as ADP offer a distinct advantage in the claims processing area, opportunities exist for smaller vendors for other applications. Shared Medical Systems, along with vendors such as Medaphis and MediQual, focus only on the medical community. PMSI specializes in the prescription area.

Disaster Recovery—Comdisco and SunGard were early entrants in the disaster recovery market and continue to be the clear market leaders for these services. As requirements for such services move beyond the mainframe into the realm of the LAN, these providers have become aggressive in expanding service offerings. For example, in August 1994, Comdisco greatly expanded its client/server disaster recovery services by opening several major "hot sites" in the New York City area designed to handle minicomputer, microcomputer and UNIX-based network systems. The sites are all linked through the Synchronous Optical Network (SONET) fiber optic system. IBM, as noted above, and SunGard have established similarly focused systems and services.

These companies have also been moving toward expanded hardware support. In 1993, SunGard added UNIX to its disaster recovery services, and also supports the RS/6000 and ES/9000. Its announced strategy is to continue extending the family of supported platforms.

Despite the dominance of these two suppliers, an increasing number of other providers, including major hardware vendors, are entering the market. IBM has agreements with Digital, Hewlett-Packard and AT&T to make joint recovery services available for customers in multiplatform environments.

C

Analysis

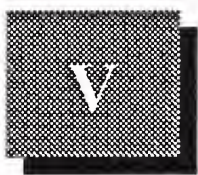
With competition coming from increased use of in-house systems and pressure to reduce costs, the leading processing services vendors cannot afford to rest on their laurels. They must resist migration to in-house systems by offering technically superior service in a cost-effective manner. There are clearly economies of scale associated with processing services and the customer must be constantly educated on the advantages of this by being made aware of economic and functional benefits.

Although some business will be lost no matter what vendors do, they still need to constantly look for new ways to provide and improve existing services to encourage an increase in transaction volumes.

Buyers often have more of a business orientation than a technical orientation. These individuals are looking for solutions to their unique needs and will favor vendors who offer services specifically oriented toward their industries and applications.

New players in the market have the best chance of success if they specialize in niche markets addressing new needs, or old needs in new, more efficient, ways. No one is likely to challenge ADP's market share for standard payroll services. Yet, if a vendor focuses on the unique payroll requirements of an industry, or processing services in new areas such as cable billing or medical records automation, opportunities for success clearly exist.

Blank



Conclusions and Recommendations

A

Conclusions

INPUT's analysis identifies positive and negative changes for the processing services market in the next five years. On one hand, there will continue to be significant spending for these services due to the continued demand for traditional services and the expanded use of new services. The economies of scale offered by processing services continue to be an advantage. On the other hand, in some segments of the market, service demand has leveled off and the availability of low-cost, in-house systems is eroding the market. This section discusses INPUT's conclusions as a result of these findings.

1. Expenditures

In looking at the three segments of the market, transaction processing will continue to represent the largest portion of processing services expenditures despite the anticipated growth in the disaster recovery area. Continued growth in this segment is expected through 1999. While some companies may choose to acquire their own in-house solutions and abandon use of a transaction processing service, INPUT projects that other needs will evolve to fill that void, either through the introduction of new services or increased volumes of existing services. With many companies experiencing reorganization and budget cutbacks, plus the trend toward outsourcing, the use of third-party offerings is looking more attractive. In addition, with the trend toward a global marketplace, processing services vendors offer a flexibility in networking that would be difficult for many companies to internally justify.

2. Demand

The use of transaction processing is changing. The demand by small businesses to use a service bureau rather than acquiring a system for traditional accounting procedures has become smaller. Likewise, demand for services such as payroll is leveling off as the unemployment rate continues to creep upward. These uses are being replaced or

2. Demand

The use of transaction processing is changing. The demand by small businesses to use a service bureau rather than acquiring a system for traditional accounting procedures has become smaller. Likewise, demand for services such as payroll is leveling off as the unemployment rate continues to creep upward. These uses are being replaced or supplemented by applications where varying volumes and/or complicated networking requirements result in favorable consideration of processing services.

3. Opportunities

To expand their business, transaction processing vendors need to focus on those service areas where a third-party provider can be competitive with other alternatives. For example, in the cable TV billing arena, the whole billing process has become increasingly complex as new forms of service are introduced—including such things as pay-per-view and interactive services. The costs to individual cable companies, many of which are small, to acquire sophisticated billing systems can be prohibitive. The processing services vendor can offer such capability at a considerable cost savings, because usage is shared among many client companies.

4. Rate of Growth

While the lion's share of expenditures will continue to occur in transaction services, the largest rate of growth will be for disaster recovery services. Companies, regardless of their type of business, are reliant on information to function. Many studies have shown that if access to information is lost for any period of time due to computer shutdowns, most companies will no longer be able to survive. Yet at the same time, adoption of disaster recovery plans and services has not yet become widespread—particularly for LANs and distributed computing environments. This is expected to change dramatically over the next few years. The large number of highly publicized natural and manmade disasters in the past few years has increased awareness of system vulnerability. Demand for disaster recovery is expected to be significant as many companies now move to put such contingency plans into place.

B

Recommendations

Based on the conclusions presented, INPUT offers the following recommendations for vendors of processing services.

1. Leverage Advantages

As discussed throughout this report, processing services vendors offer economies of scale for certain applications. Because services are shared among many users, transaction processing vendors can invest in large-scale, sophisticated systems with flexible, high-speed networking capability. Theoretically, because these costs are shared, the cost to the buyer should be reasonable. Vendors need to direct their marketing efforts toward those application areas where these advantages are most apparent. For example, focusing on the cable billing market offers an opportunity to showcase such benefits. The use of a processing service for basic accounting applications for small businesses that can easily handle such needs on a PC will be a "harder sell" in the future.

In order to emphasize the economies of scale, vendors must make sure that their services do indeed provide such benefits. Vendors should constantly be evaluating new technology that processes information faster and smarter to make sure that their technology is competitive with other alternatives. Because costs are shared, many of those financial benefits should be passed on to the user in the form of competitive costs.

2. Transaction Volumes

Because users make use of processing services on a pay-as-you-go basis, there is inherent variability in the use of the services. Vendors need to constantly focus on increasing transaction volumes to maintain a reasonable rate of growth and compensate for the normal loss of business to in-house and other options. In some cases, increased volume involves expanding service offerings. Vendors that have been successful in the finance sector should look for new services to offer this market to address additional needs. As transaction volumes for certain applications level off over time, vendors specializing in one particular industry may need to look into servicing other vertical markets that may be growing at a faster rate.

Other opportunities for growth include expanding geographic coverage. As companies expand their business geographical boundaries, vendors must be able to also expand coverage to maintain the business.

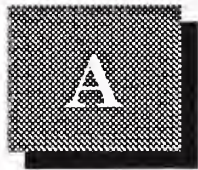
3. Specialized Needs

Certain industries, such as banking and finance, have predominantly used processing services. Companies in these markets have made ongoing use of processing services for certain applications. As they have expanded their own service offerings into new domains, they have also used processing services vendors for new applications. While these markets will continue to represent the largest expenditures, opportunity

for significant growth exists most in those markets that have made less use of processing services in the past. Health care, for example, represents new opportunities due to the need for on-line claims processing. Telecommunications is another industry where new requirements are occurring. Vendors need to carefully select new markets and develop in-house expertise based on the business requirements of those markets in order to package appropriate solutions to the requirements of these buyers.

4. Breadth of Services

With the recent move toward open systems and away from proprietary solutions, buyers have indicated they want the opportunity to select the best alternative without being committed to only one application solution. Processing services, while offering distinct advantages for some requirements, is not going to be the most competitive solution to all requirements for all buyers. Most vendors have realized the need to offer related services to support their business growth. This will continue to be an important strategy. For some, a vertical market focus will be most effective—with processing services solutions for specific applications offered along with such services as applications software, consulting, or turnkey systems. Many large providers may offer system operations and system integration services along with processing services across many vertical industries.



Forecast Database and Reconciliation

A

Forecast Database

Exhibit A-1 presents the detailed 1994-1999 forecast for the processing services market.

Exhibit A-1

Processing Services
U.S. Market Forecast by Industry Sector, 1993-1999

INDUSTRY SECTOR	1993 (\$M)	Growth 93-94 (%)	1994 (\$M)	1995 (\$M)	1996 (\$M)	1997 (\$M)	1998 (\$M)	1999 (\$M)	CAGR 94-99 (%)
Product/Service Sector									
Total	21,629	8%	23,407	25,317	27,421	29,757	32,356	35,205	9%
Banking & Finance	4,138	9%	4,502	4,898	5,329	5,873	6,507	7,210	10%
Total Cross-Industry	3,639	6%	3,869	4,080	4,318	4,535	4,784	5,010	5%
Transportation	2,268	6%	2,403	2,540	2,692	2,850	2,995	3,145	6%
Business Services	1,730	2%	1,762	1,794	1,828	1,862	1,888	1,915	2%
Telecommunications	1,195	15%	1,370	1,583	1,828	2,112	2,440	2,819	16%
Discrete Manufacturing	894	3%	925	952	980	1,009	1,039	1,069	3%
Process Manufacturing	789	4%	817	842	872	906	930	960	3%
Health Services	553	5%	582	599	622	655	680	706	4%
Insurance	395	4%	410	433	457	483	510	538	6%
State & Local Government	369	12%	415	467	526	592	667	751	13%
Wholesale Trade	325	4%	337	349	360	367	373	382	3%
Utilities	279	11%	310	344	382	425	472	525	11%
Education	206	3%	212	217	220	224	229	233	2%
Retail Trade	186	6%	197	209	222	235	249	264	6%
Federal Government	161	-6%	152	158	156	153	149	146	-1%
Miscellaneous Industries	137	-2%	134	132	129	126	124	122	-2%
Other Markets	4,365	15%	5,010	5,720	6,500	7,350	8,320	9,410	13%
--Utility Processing	1,030	4%	1,075	1,120	1,170	1,220	1,270	1,320	4%
--Other Processing	3,335	18%	3,935	4,600	5,330	6,130	7,050	8,090	16%

B

Forecast Reconciliation

The forecast reconciliation for the processing services market is shown in Exhibit A-2. Processing services spending in 1993 was 4% higher than what was projected in the 1993 report. This is largely due to higher than

heavy activity in the accounting and office systems cross-industry markets. In these markets, both document- and image-related processing activity rose due to the increased use, and lower cost, of desktop- or PC-LAN- based software and network systems. The cross-industry sector in general is a leader when it comes to client/server or distributed systems implementation.

Exhibit A-2

Processing Services
1994 Database Reconciliation by Market Sector

INDUSTRY SECTOR	1993 Market				1998 Market				93-98	93-98
	1993	1994	Variance From		1993	1994	Variance From		CAGR	CAGR
	Market (Frcst) (\$M)	Report (Actual) (\$M)	1993 Forecast (\$M)	(%)	Market (Frcst) (\$M)	Report (Frcst) (\$M)	1993 Forecast (\$M)	(%)	per data '93 Rpt (%)	per data '94 Rpt (%)
Product/Service										
Sector Total	20,878	21,629	751	4%	31,223	32,356	1133	4%	8%	8%
Banking & Finance	4,125	4,138	13	0%	6,400	6,507	107	2%	9%	9%
Total Cross-Industry	2,935	3,639	704	24%	3,776	4,784	1008	27%	5%	6%
Transportation	2,239	2,268	29	1%	2,950	2,995	45	2%	6%	6%
Business Services	1,730	1,730	0	0%	1,891	1,888	-3	0%	2%	2%
Telecommunications	1,210	1,195	-15	-1%	2,490	2,440	-50	-2%	16%	15%
Discrete Manufacturing	896	894	-2	0%	1,039	1,039	0	0%	3%	3%
Process Manufacturing	770	789	19	2%	890	930	40	4%	3%	3%
Health Services	545	553	8	1%	675	680	5	1%	4%	4%
Insurance	393	395	2	1%	528	510	-18	-3%	6%	5%
State & Local Government	364	369	5	1%	641	667	26	4%	12%	13%
Wholesale Trade	317	325	8	3%	373	373	0	0%	3%	3%
Utilities	281	279	-2	-1%	475	472	-3	-1%	11%	11%
Education	205	206	1	0%	231	229	-2	-1%	2%	2%
Retail Trade	186	186	0	0%	255	249	-6	-2%	7%	6%
Federal Government	180	161	-19	-11%	165	149	-16	-10%	-2%	-2%
Miscellaneous Industries	137	137	0	0%	124	124	0	0%	-2%	-2%
Other Markets	4,365	4,365	0	0%	8,320	8,320	0	0%	14%	14%
—Utility Processing	1,030	1,030	0	0%	1,270	1,270	0	0%	4%	4%
—Other Processing	3,335	3,335	0	0%	7,050	7,050	0	0%	16%	16%

Other sectors where 1993 expenditures were slightly higher than projected include:

Wholesale Trade	3%
Process Manufacturing	2%
Transportation	1%
Health Services	1%
Insurance	1%
State & Local Government	1%

The sector with the largest negative variance compared to the 1993 projections was the Federal Government, with expenditures for 1992 being 11% below INPUT's forecast. The uncertainty regarding government plans for national health care has been a major factor delaying many systems decisions in this sector. Base closing and cuts in the Defense budget have also had a major practical impact on spending in this market.

Other vertical sectors where 1993 expenditures were slightly lower than projected include:

Telecommunications	-1%
Utilities	-1%

The 8% CAGR for the period 1993-1998 remains unchanged. However, in looking at the vertical sectors, slight variances in 1993 will become larger in 1997, showing an ongoing trend in those sectors. For example, in banking, the virtually zero variance in 1993 grows to 2% in 1998, foretelling likely growth as U.S. banks reach further into international markets. And in the cross-industry sector, the 1998 variance is expected to increase even more, to 27%. INPUT believes this reflects further design and implementation of client/server systems which will be ever more affordable.

Overall, CAGR rates for 1993-1998 remain fairly stable, with most sectors varying no more than 1% from the projections in INPUT's 1993 report. In fact, the most stable markets forecast are utility processing and other (disaster recovery) processing. These two markets have proven to be constant and reliable. Because of its importance, disaster recovery has become a consistently funded budget item which businesses must have. INPUT believes that this will continue for the forecast period, particularly in light of the natural disasters of recent years.

